

1.1 BACKGROUND

This Tucson Electric Power Company (TEP) Sahuarita-Nogales Transmission Line Environmental Impact Statement (EIS) assesses the potential environmental impacts associated with constructing and operating a 345,000-volt (345-kV) electric transmission line across the United States (U.S.)-Mexico border. As explained below, the proposed action involves the following Federal entities: the U.S. Department of Energy (DOE); the U.S. Department of Agriculture, U. S. Forest Service (USFS); the U.S. Department of the Interior, Bureau of Land Management (BLM); and the U.S. Section, International Boundary and Water Commission (USIBWC) [hereafter, the Federal entities will be collectively termed the “Federal agencies” in this EIS.] This Final EIS reflects changes made to the Draft EIS. Changes are indicated by a double underline for minor changes and a sidebar in the margin for larger changes.

Under Executive Order (EO) 10485 (September 3, 1953), as amended by EO 12038 (February 3, 1978), no one may construct, connect, operate, or maintain facilities at the U.S. international border for the transmission of electric energy between the United States and a foreign country without first obtaining a Presidential Permit from the DOE. On August 17, 2000, TEP applied to DOE for a Presidential Permit to construct, connect, operate, and maintain a double-circuit, 345-kV alternating current (AC) electric transmission line across the U.S.-Mexico border. DOE determined that issuing a Presidential Permit to TEP for the proposed project would constitute a major Federal action that may have a significant impact on the environment within the meaning of the *National Environmental Policy Act* (NEPA), 42 United States Code (U.S.C.) §§ 4321 et seq. For this reason, DOE has prepared this EIS to evaluate potential environmental impacts from the proposed Federal action (granting a Presidential Permit for the proposed transmission facilities) and reasonable alternatives, including the No Action Alternative.

TEP’s proposed transmission line would cross private land, state of Arizona land, up to 30 miles (48.3 km) of the Coronado National Forest administered by the USFS, approximately 1.25 mi (2.0 km) of Federal lands administered by BLM, and the international border. Therefore, in addition to the issuance of a Presidential Permit by DOE, the USFS, BLM, and USIBWC must grant approvals before TEP can implement its proposal. Section 1.1.1 describes the proposed actions addressed in this EIS and the agency approvals that would be necessary.

The potential environmental impacts of the proposed actions of all four Federal agencies are evaluated in this EIS. In accordance with the Council on Environmental Quality (CEQ) regulations implementing NEPA, DOE has assumed the role of lead Federal agency for the NEPA review of TEP’s proposal and preparation of this EIS. Both the USFS and BLM are participating in this NEPA review process as cooperating agencies in order to fulfill their respective NEPA compliance requirements. DOE, USFS, and BLM will each independently issue a Record of Decision (ROD) that addresses the specific agency actions defined above and is based, among other things, on the impacts analysis and findings of this EIS. While USIBWC plans to use the findings of this EIS in its concurrence regarding the TEP proposal, it is not formally a cooperating agency and would not issue a ROD on its action. The Federal agencies can issue a ROD no sooner than 30 days after the Environmental Protection Agency (EPA) publishes a notice of availability in the *Federal Register*. DOE and BLM could issue their respective permits or ROW grants concurrently with their RODs. However, USFS regulations at 36 CFR 215 differ from the other two agencies in that they also provide for a 45-day administrative appeal period following issuance of a ROD. If an appeal or appeals are received, USFS must follow the 36 CFR 215 process and render a decision on the merit of the challenge. Until all appeals are resolved, the TEP proposal could not be implemented on National Forest System land.

The format and content of this EIS conforms to CEQ regulations and each agency's respective NEPA implementing regulations. DOE's NEPA regulations are codified at 10 CFR 1021, and BLM's are found in the BLM Manual and Handbook 1790-1 and Departmental Guidance (516 DM 1-7). The USFS relies upon CEQ regulations as primary direction for compliance with NEPA. Additionally, USFS regulations codified at 36 CFR 215 complement, but do not replace, CEQ regulations by providing a regulatory framework for compliance with NEPA and additional direction regarding public participation opportunities. The agency further interprets these regulations in its Directives System, Forest Service Manual 1950: *Environmental Policy and Procedures*, and Forest Service Handbook 1909.15, *Environmental Policy and Procedures Handbook*. These Directive System components establish policy and provide guidance for USFS NEPA practitioners and decision-makers.

1.1.1 The Proposed Action

This EIS addresses Federal actions that would individually result in an administrative decision of approval or disapproval of a TEP application, whether by permit, ROW grant, or other legally binding authorization. Although such administrative actions are not in themselves likely to impact the environment, they nevertheless *authorize implementation of an action or project* that could. These are applicant-initiated actions that become the "proposed action" or subject of the impacts analysis upon which an administrative decision is made.

Thus, approval of any of the Federal agency actions addressed in this EIS would authorize an applicant-initiated action-- the TEP proposal-- which has the potential for environmental impact. Because of this, the focus of the impacts analysis in this EIS is on all aspects of TEP's proposed action as well as reasonable alternative actions. The implementation of TEP's proposed action would be enabled by each agency's administrative approval of a TEP application.

In general, the following major elements comprise TEP's proposal, not all of which require Federal approval:

- Expand the South Substation at Sahuarita, Arizona
- Construct a double-circuit, 345-kV transmission line from Sahuarita, Arizona, to Nogales, Arizona, a distance of approximately 65 mi (104 km), including a fiber optics line for communications
- Construct a new Gateway Substation at Nogales, Arizona
- Construct a 115-kV transmission line from the new Gateway Substation to the existing Valencia Substation at Nogales, Arizona
- Add additional equipment to the existing Valencia Substation
- Construct temporary and permanent roads as necessary to access the transmission line corridor
- Construct relatively minor ancillary and support structures

More details of this proposal are as follows:

As shown on Figure 1.1-1, TEP proposes to construct a double-circuit, 345-kV transmission line approximately 65 mi (104 km) in length. The proposed transmission line would originate at TEP's existing South Substation, which is located approximately 15 mi (24 km) south of Tucson in Sahuarita,

Arizona, and 1.4 mi (2.2 km) east of Interstate 19 (I-19) in Pima County, Arizona. The South Substation would be expanded by an estimated 1.3 acres (0.53 ha) to add a switching device that would connect to the proposed transmission line by moving the fenceline 100-ft (30-m) to the east. From the South Substation, the proposed transmission line would run south of Tucson, Arizona, to a new Gateway Substation outside Nogales, Arizona in Santa Cruz County. The new Gateway Substation would be constructed within a developed industrial park an estimated 0.5 mi (0.8 km) east of the Coronado National Forest boundary (see Section 2.2.1 for additional details regarding the South Substation upgrades and new construction). From the Gateway Substation, the proposed 345-kV line would continue across the U.S.-Mexico border and interconnect with the Mexico electric grid.

The specific actions that would be taken to connect TEP's 345-kV line to the Mexican electric grid are not known. TEP has indicated that further consultation between TEP and the Comisión Federal de Electricidad (CFE, the national electric utility of Mexico), is dependent upon TEP receiving a Presidential Permit for the proposed project. Nonetheless, it is reasonably foreseeable that a transmission line would need to be built from the existing Santa Ana Substation in Mexico, which is located approximately 65 miles (105 km) southwest of Nogales, to connect with TEP's proposed 345-kV line that would terminate across the U.S.-Mexican border. The specific routing of such a transmission line has not yet been determined. CFE and TEP would jointly determine what entity is responsible for designing and constructing the portion of the connecting transmission line in Mexico. The most likely entity to be responsible for the construction in Mexico is CFE, although it is possible that TEP may construct a portion of the transmission line in Mexico. It is also possible that CFE could construct a new substation in the Nogales, Sonora area that would serve as the connecting point to TEP's proposed 345-kV line. However, even in that event, a transmission line between the existing Santa Ana Substation and such a new substation would still be required, as described above, in order to connect TEP's 345-kV line with the Mexican electric grid. The proposed line in the U.S. could both export electricity to, and import electricity from, Mexico.

Three alternative transmission line corridors (the Western Corridor, Central Corridor, and Crossover Corridor) are analyzed in this EIS, as shown in Figure 1.1-2, and as described in detail in Sections 2.1.1, 2.1.2, and 2.1.3 respectively. The double-circuit transmission line would consist of 12 transmission line wires, or conductors, and two neutral ground wires that would provide both lightning protection and fiber optic communications, on a single set of support structures. The primary structures to be used are the self-weathering steel single poles, or monopoles, depicted in Figure 1.1-3. Dulled, galvanized steel lattice towers, depicted in Figure 1.1-4, would be used in specific locations for engineering reasons or to minimize overall environmental impacts (for example, impacts to soils or archaeological sites).

In addition, TEP proposes to build a 115-kV transmission line to interconnect its proposed Gateway Substation with the electric distribution system that serves Nogales, Arizona, and the greater Santa Cruz Valley Service Area through the existing Valencia Substation, as shown in Figure 1.1-5. The support structures that would be used for this 115-kV line would be the self-weathering galvanized steel single poles depicted in Figure 1.1-3. The existing electric distribution system was previously owned and operated by Citizens Communications Company (Citizens), formerly named Citizens Utilities, and is currently owned and operated by UniSource, the new parent company of TEP and Citizens. TEP would also install additional equipment at the existing Valencia Substation, but would not expand the facility beyond the existing footprint. The proposed 115-kV line from the new Gateway Substation to the Valencia Substation would cross neither the U.S.-Mexico border nor any Federal lands. Accordingly, the Federal agencies have no apparent jurisdiction over its path. This EIS does, however, present the potential environmental impacts of this line as a reasonably foreseeable connected action because project that would contribute to cumulative impacts. Moreover, the impacts of the 115-kV line from the Gateway Substation to the Valencia Substation would not occur if it were not for the proposed 345-kV line, which does require Federal approvals.

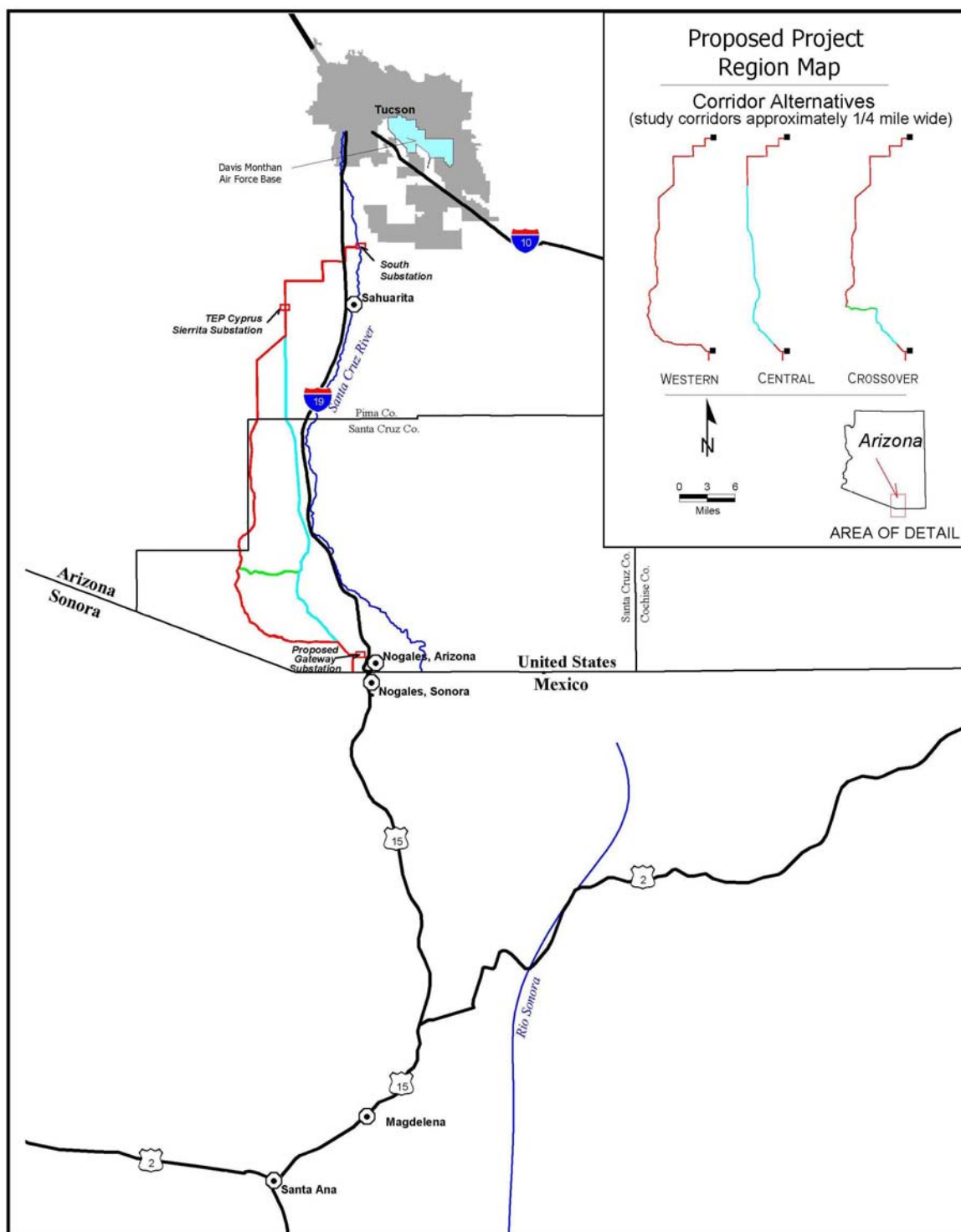


Figure 1.1–1. Proposed Project Region Map.

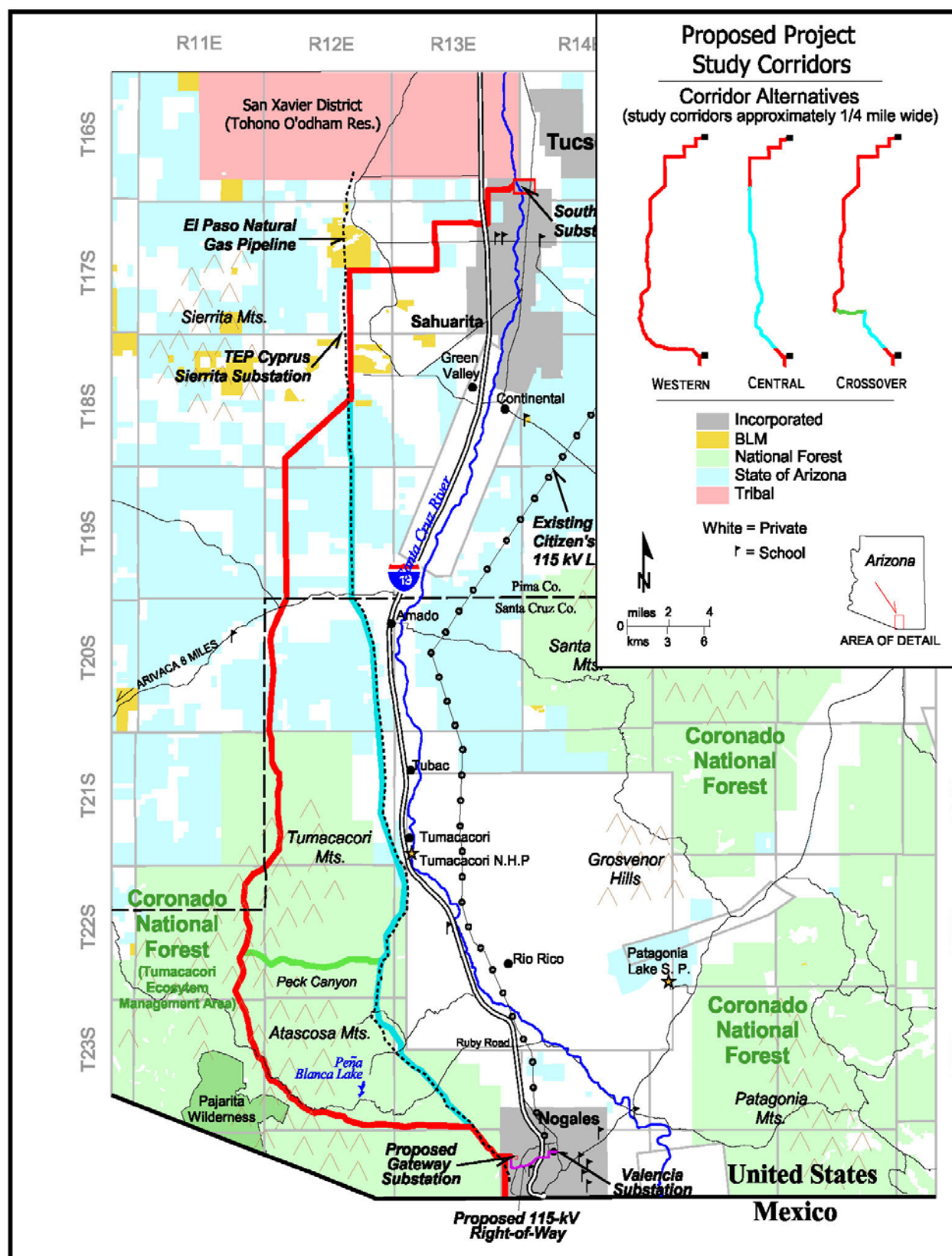


Figure 1.1-2. Proposed Project Study Corridors.

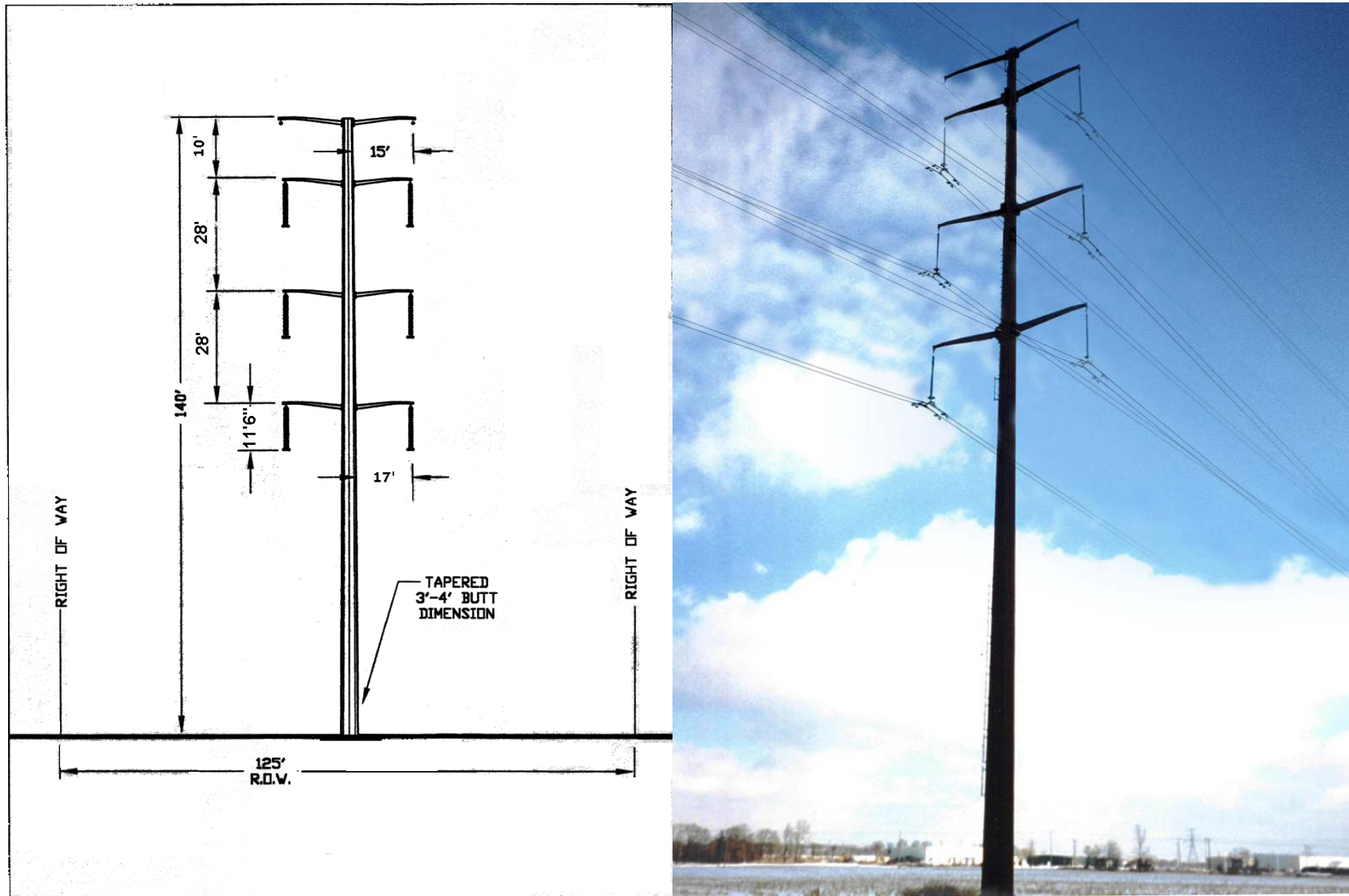


Figure 1.1-3. Monopole Transmission Line Structure Drawing and Photo.

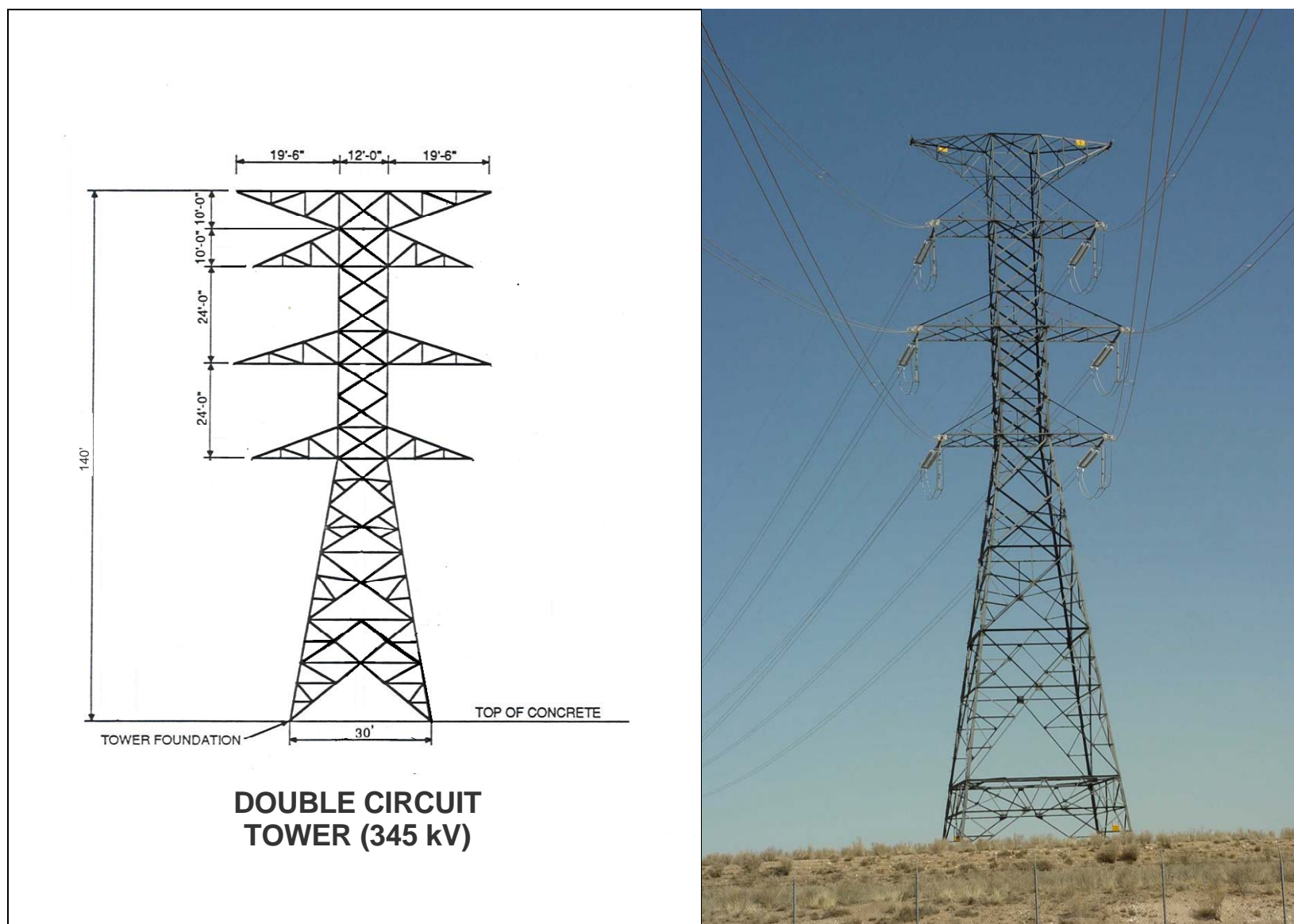


Figure 1.1-4. Lattice Tower Transmission Line Structure Drawing and Photo

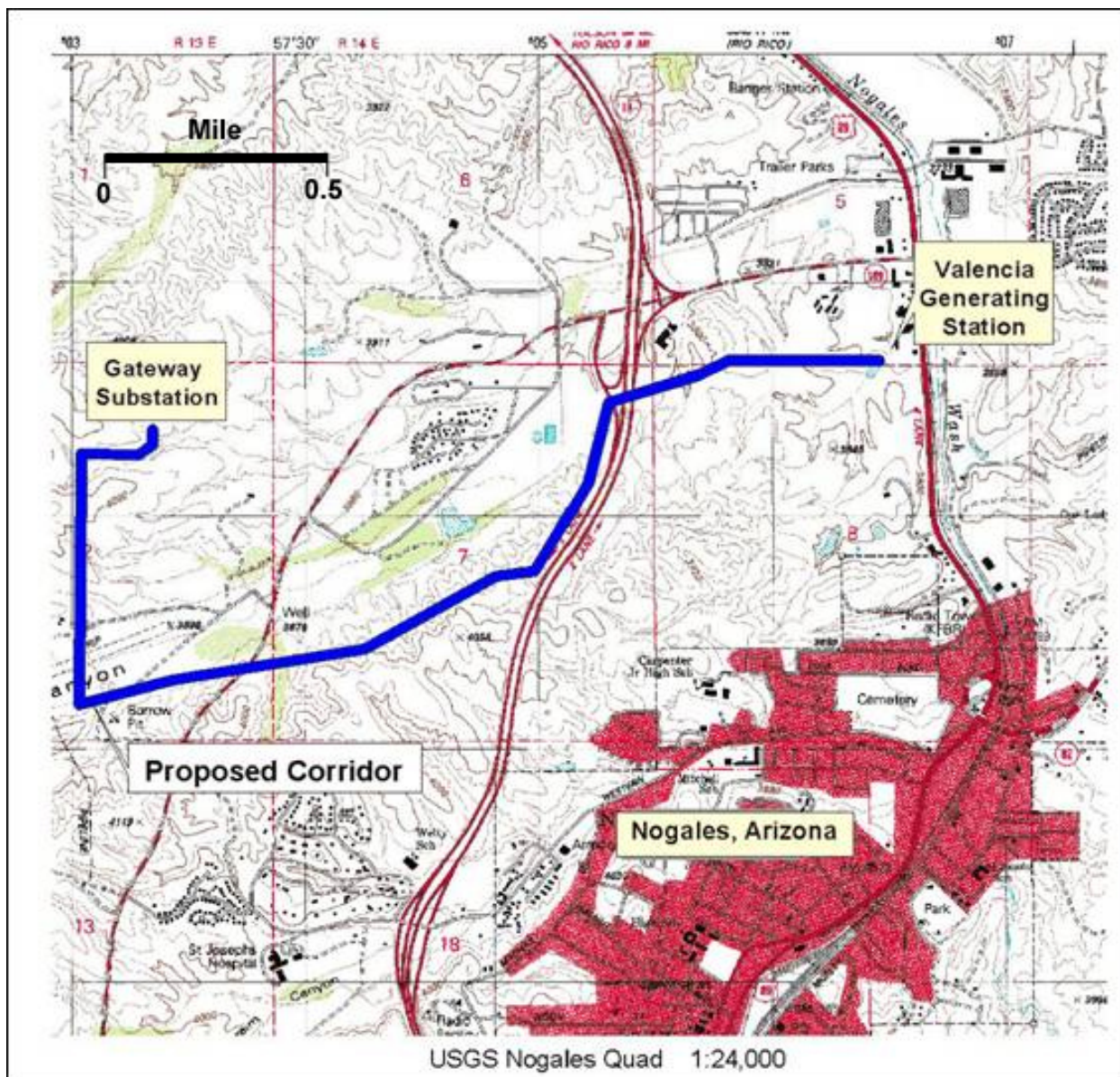


Figure 1.1-5. Gateway to Valencia 115-kV Transmission Line.

There is an existing El Paso Natural Gas Company (EPNG) buried pipeline within the project area, and segments of the three alternative transmission line corridors either cross the pipeline ROW, run immediately adjacent to the pipeline ROW, or are roughly parallel to the pipeline ROW within a distance of approximately 0.5 mi (0.8 km). This EIS uses the terms “follows or crosses” to describe the relationship between each transmission line corridor and the EPNG pipeline ROW.

The proposed actions of the Federal agencies involved in this EIS are as follows:

DOE. DOE’s action is in response to TEP’s request for a Presidential Permit. Like all Federal agencies, DOE must comply with NEPA and, in this instance, has agreed to be the lead Federal agency for NEPA compliance. DOE’s proposed action is to approve an application by TEP for a Presidential Permit to allow construction, operation, maintenance, and connection of transmission lines and associated facilities for the export and/or import of electricity across the international border with Mexico.

USFS. Because TEP’s proposed alternative transmission line routes from Sahuarita to Nogales would cross National Forest System lands within the Coronado National Forest, the USFS must authorize TEP’s occupancy and use of National Forest System lands, in accordance with the Federal Land Policy and Management Act (FLPMA) of 1976 (40 U.S.C. § 1761), to use or establish a utility corridor on National Forest System lands. TEP submitted an application for such authorization to USFS on April 20, 2000.

As part of its deliberation regarding TEP’s application, the USFS must comply with NEPA and the requirements of the National Forest Management Act (NFMA) (16 U.S.C. 1600-1614, as amended and 36 CFR 219). NFMA requires that proposals seeking authorization for specific uses of National Forest System lands be reviewed for consistency with the goals, objectives, standards, and guidelines set forth in the governing land and resource management plan. Should one or more inconsistencies be identified, an amendment or amendments to the land and resource management plan must be completed prior to the proponent’s (e.g., TEP’s) implementation of the intended use.

A proposal to amend the land and resource management plan itself requires a NEPA review, per the NFMA; this may be accomplished by either integrating the proposed amendment(s) with their related proposed action to be dually evaluated in one NEPA review, such as this TEP EIS, or by completing a wholly independent NEPA review. With regard to TEP’s proposed action and alternatives, USFS has identified specific amendments to the Land and Resource Management Plan for the Coronado National Forest (1986, as amended) (hereafter, Forest Plan) that would be necessary prior to implementation of TEP’s proposal and has chosen to integrate the NEPA review of the amendment process within this EIS.

BLM. TEP’s proposal would require approval of a right-of-way (ROW) grant by the BLM to allow project facilities to occupy a total of 1.25 mi (2.0 km) of Federal land under BLM jurisdiction. TEP submitted a ROW application to the BLM for the transmission line on March 20, 2001, and a separate application for fiber-optic facilities on April 14, 2003. In similar fashion to the USFS NFMA consistency review, BLM must review TEP’s application to determine whether the proposed use of the ROWs conforms with BLM’s Resource Management Plan (BLM 1988) for the project area [43 CFR 1610.3-2(a)]. The BLM’s proposed action is to authorize two ROWs on public lands under its jurisdiction: one for 1.25 mi (2.0 km) of the transmission line, and the other for 0.25 mi (0.39 km) of fiber-optic facilities.

USIBWC. Because the proposed 345-kV transmission line would cross the U.S.-Mexico border, USIBWC is required to assess whether the effects of the proposed project would be consistent with existing bilateral arrangements between the two countries or would obscure or otherwise impact the international border. As such, the USIBWC’s proposed action is to concur on TEP’s proposal relative to activities that will occur at and near the international border with Mexico.

1.1.2 The Origin of TEP's Proposal: TEP's Business Plan and the Proceedings of the Arizona Corporation Commission

TEP's proposed project arose from the confluence of TEP's business interests, Citizen's need for reliable power in Nogales, and the State of Arizona's strategy for solving electricity service problems in the City of Nogales, Arizona, and in the Santa Cruz Valley service area. TEP had long considered the possibility of building a 345-kV line that would connect to the Mexican electricity grid, thereby allowing TEP and others to import and export electricity. For several years, TEP prepared studies and met with Mexican energy officials to discuss such a project. Meanwhile, Citizens was taking steps to remedy service problems it was experiencing in Nogales and the Santa Cruz Valley service area. In 1998, the Santa Cruz Valley service area was serviced by only a single 55-mi (89 km), 115-kV transmission line and limited local generation at the Valencia Substation. Customers in Nogales and elsewhere throughout the area experienced numerous outages. For example, in 1998, the average hours of outage experienced annually by customers rose from 3.5 hours in 1997 to 12.3 hours in 1998. The primary cause of service degradation during this one year was attributable to four transmission line outage events. In response to these problems, the City of Nogales filed a complaint with the Arizona Corporation Commission (the ACC).

The ACC is the state agency charged with regulation of Arizona's electric utilities and responsible for assuring Arizona citizens a safe, reliable power system. State law also charges the ACC with safeguarding the public interest by balancing the need for an adequate, economical and reliable supply of electric power with the desire to minimize the effect thereof on the environment and ecology of Arizona. *See* Ariz. Rev. Stat. 40-360.07(B).

In response to the complaint filed by the City of Nogales, the ACC concluded that such outages can be expected to occur until such time as a second transmission line is constructed to Nogales. On November 2, 1999, the ACC approved a Settlement Agreement with Citizens which mandated the construction of a second transmission line to Nogales, Arizona by December 31, 2003. The Settlement Agreement states that Citizens would pay a penalty of \$30,000 per month for each full month of delay in the construction after December 31, 2003. The Settlement Agreement also allows for Citizens to file for a delay in the construction date and/or waiver of the penalty no later than December 31, 2003. (See ACC Decision No. 62011, dated November 2, 1999, in Appendix J.).

At approximately the same time that Citizens was responding to the ACC, TEP approached Citizens with the concept of a joint project. Together they discussed the idea of building a transmission line to Mexico with the ACC's staff. Upon learning of the proposed 345-kV line, the ACC's staff encouraged Citizens and TEP to find a way to accomplish both Citizens' and TEP's needs with one transmission line and a single set of support structures rather than two separate lines running south. TEP and Citizens agreed to jointly construct a 345/115-kV interconnection project from TEP's existing South Substation to a proposed new TEP substation in Nogales. From there, Citizens planned to construct a new 3-mile (5 km), 115-kV, line from a proposed new substation to an existing substation to serve Nogales and the Santa Cruz Valley service area. TEP also proposed to construct a 2-mile (3 km) stretch of 345-kV line to the border to interconnect with the Mexican transmission system owned by the CFE, the national electric utility of Mexico.

Under Arizona state law, any utility desiring to construct a power plant or transmission line in Arizona must first obtain from the ACC a Certificate of Environmental Compatibility ("CEC"). *See* Ariz. Rev. Stat. § 40-360.07(A). The Arizona Power Plant and Line Siting Committee ("Siting Committee"), a committee created by the ACC, is charged with evaluating all such CEC applications and issuing recommendations concerning CECs. *Id.* The Siting Committee is made up of eleven (11) members, including actual representation by, or designees of, the State Attorney General, the Director of

Environmental Quality, the Director of Water Resources, the Director of the Energy Office of the Department of Commerce, the Chairman of the ACC, and six members appointed by the ACC representing the public, incorporated cities and towns, counties, and agricultural interests. *See* Ariz. Rev. Stat. § 40-360.01(B).

When a utility files an application for a CEC, the Siting Committee is required by state law to set a hearing date and provide public notice of the hearing date and location. *See* Ariz. Rev. Stat. § 40-360.04. Members of the public may attend the hearing, participate in the proceeding, and file comments with the Siting Committee. During the hearing, the Siting Committee hears testimony from and cross-examination of witnesses, actively participates in the questioning of witnesses, and receives evidence from parties and intervenors. The Siting Committee then votes on whether to grant or deny a CEC.

The Siting Committee, in deciding whether to approve or deny a CEC application, and/or whether to impose conditions upon the issuance of a CEC, considers the following factors as a basis for its action:

- (1) Existing plans of the state, local government and private entities for other developments at or in the vicinity of the proposed site;
- (2) Fish, wildlife and plant life and associated forms of life upon which they are dependent;
- (3) Noise emission levels and interference with communication signals;
- (4) The proposed availability of the site to the public for recreational purposes, consistent with safety considerations and regulations;
- (5) Existing scenic areas, historic sites and structures or archaeological sites at or in the vicinity of the proposed site;
- (6) The total environment of the area;
- (7) The technical practicability of achieving a proposed objective and the previous experience with equipment and methods available for achieving a proposed objective;
- (8) The estimated cost of the facilities and site as proposed by the applicant and the estimated cost of the facilities and site as recommended by the committee, recognizing that any significant increase in costs represents a potential increase in the cost of electric energy to the customers or the applicant; and
- (9) Any additional factors which require consideration under applicable Federal and state laws pertaining to any such site.

Ariz. Rev. Stat. § 40-360.06. In addition, the Siting Committee is required to give “special consideration to the protection of areas unique because of biological wealth or because they are habitats for rare and endangered species.” *Id.* If granted, the CEC is forwarded to the ACC for independent review and action. The ACC may affirm, modify, or deny the Siting Committee’s decision. *See* Ariz. Rev. Stat. § 40-360.07.

On March 1, 2001, TEP and Citizens filed a Joint Application for a Certificate of Environmental Compatibility with the Arizona Power Plant and Transmission Line Siting Committee (Line Siting Committee) of the ACC. The Line Siting Committee evaluated three potential routes for TEP’s line: a Western, Central, and Eastern route (except for the Eastern route, these are essentially the same alternatives as those that are considered in this EIS review.) Between March 1, 2001, and its final

decision on October 29, 2001, the state's Line Siting Committee held 7 public hearings, a procedural conference, toured a portion of the proposed route, and heard oral argument.¹

On October 19, 2001, the Siting Committee submitted its recommendation to issue a CEC for TEP's proposed transmission line down the Western Corridor only with a number of conditions imposed on this CEC. *See* Siting Committee Form of Decision and CEC, L-00000C-01-0111 & L-00000F-01-0111 (see Appendix J). The Siting Committee's decision to issue a CEC for the Western Corridor only was based, in pertinent part, on the following factors: (1) siting the line along the Western Corridor offered the greatest reliability due to the separation of the transmission lines by a mountain range; (2) the Western Corridor was determined to be the least visually intrusive for Arizona residents; and (3) the environmental conditions and mitigation requirements imposed in the CEC provided appropriate protection for the environment. *Id.*

This was followed by TEP's and Citizens' Joint Petition for Review by the ACC on November 2, 2001. On December 11 and 12, 2001, the ACC heard oral argument and public comments on the Line Siting Committee's decision. (For detailed information, see the transcript of the May 17, 2001, hearing at pp. 649-650 and 637-639. Appendix J provides information to access these transcripts.)

On January 3, 2002, the ACC held a special public meeting to receive additional comments and suggestions relative to the Line Siting Committee's recommendation. On January 15, 2002, the ACC issued its decision affirming the Line Siting Committee's recommendation, issuing the CEC for the Western Corridor only, and rejecting the alternative Eastern and Central Corridors. (See ACC Decision 64356 in Appendix J.) During its deliberations, the ACC acknowledged that the decision was difficult, with one Commissioner noting that "the troubling aspect of line siting cases is you either site through homes or in neighborhoods where people are disturbed or you site in sparsely populated areas where people are not disturbed." January 15, 2002 ACC Transcript, p. 114.

Voting to approve the CEC for the Western Corridor, each ACC commissioner stated that this corridor best balanced the competing public interests with environmental concerns. *See* January 15, 2002 ACC Transcript, p. 117 (Commissioner Spitzer) ("[I]n balancing all the competing considerations . . . I think public interest compels an affirmative vote on the CEC."); January 15, 2002 ACC Transcript, p. 119 (Commissioner Irvin) ("I think that the line siting has developed appropriate balance with the conditions the Commission has put in on the environmental aspects."); January 15, 2002 ACC Transcript, p. 121 (Chairman Mundell) (noting that this case is difficult because the ACC is "trying to balance protecting the environment on the one hand and making sure we have reliable, affordable electricity on the other.").

¹ During the Line Siting Committee's proceedings, the Committee heard from 17 witnesses, took comment from over 25 members of the public, received over 18 letters of public comment, and received hundreds of pages of exhibits. The Line Siting Committee also took testimony from the DOE. Transcripts of these proceedings, comprising some 1,914 pages, are included in the administrative record. Appendix J provides information on accessing the Line Siting Committee proceedings. Twelve intervenors also participated in the case, including persons and organizations that appeared and commented in this EIS review. The intervenors were Santa Cruz County, the City of Nogales, Public Service of New Mexico, the Santa Cruz County Citizens Council, Mr. Walter Meek, Mr. Marshall Magruder, Mrs. Lucy Magruder, Mr. William Kurtz, Mrs. Ellen Kurtz, Mr. Emilio Falco, Ms. Titilah, and the Arizona Center for Law in the Public Interest. In addition to having the opportunity to file briefs and present argument to the Committee, the intervenors also had opportunities to cross examine witnesses. (See, e.g. transcript of the March 7, 2001 hearing).

As part of ACC Decision 64356, the ACC granted TEP and Citizens a CEC to construct the proposed Gateway 345-kV and 115-kV Transmission Project for the preferred Western Corridor, consistent with the Line Siting Committee's decision. The CEC issued to TEP and Citizens expires January 15, 2005. Per the ACC decision, the Gateway Project approved in Decision No. 64356 addresses the service reliability problems in Santa Cruz County and offers added benefits, such as improved reliability with a 345-kV transmission line and an interconnection with Mexico.

In 2003, Citizen's electric assets were acquired by UniSource Energy Corporation (UNS). The ACC approved the acquisition in Decision No. 66028 (July 3, 2003). UNS formed UniSource Energy Services, Inc. (UES) after the acquisition to provide electric service in the former Citizen's territories, including Santa Cruz County. UNS is the parent holding company for both TEP and UES.

TEP, however, cannot proceed to build the transmission line on Federal lands until it obtains the approvals of the Federal agencies preparing this EIS. Accordingly, both TEP's project and execution of the ACC's orders await completion of this EIS and final decisions by the Federal agencies. On December 3, 2003, the ACC called a meeting to address the issue of TEP's imminent failure to meet the December 31, 2003, completion date. After hearing from TEP, DOE, BLM, USFS, and the public, the ACC issued Order No. 66615 on December 9, 2003, which waived the \$30,000 monthly penalty until June 1, 2004. The Commission also held that the need date for the transmission line would remain Dec. 31, 2003. This Order recognized that TEP has been unavoidably constrained by the necessity of awaiting the Federal agencies' actions. On July 28, 2004, the ACC met again to address another application filed by TEP and UNS seeking waiver of the \$30,000/month penalty. Subsequent to this hearing, on August 3, 2004, the ACC waived the penalties indefinitely. (See ACC Decision No. 67151 in Appendix J).

1.2 PURPOSE AND NEED

1.2.1 TEP's Purpose and Need

TEP needs the respective permits and approvals from DOE, USFS, BLM, and USIBWC in order to proceed with its proposed project and to comply with the terms of the ACC's orders, which mandate the construction of a second transmission line to Nogales, Arizona and grant a Certificate of Environmental Compatibility to construct a new 345-kV transmission line to interconnect with the CFE transmission system at the U.S./Mexico border as discussed above in Section 1.1.2. For additional information regarding the ACC orders, see Appendix J.

1.2.2 Federal Agencies' Purpose and Need Statements

NEPA requires Federal decision makers to consider the environmental effects of their actions. As discussed above, because TEP's proposal involves the respective jurisdictions of four different Federal agencies, TEP will have to obtain the approval of each and all of them to go forward.

An agency's statement of purpose and need defines the reason and context for that agency's action, i.e., it explains what the agency is called upon to do, given its authority. Based on this statement of purpose and need, an agency identifies the range of reasonable alternatives it will consider in the EIS. Because each Federal agency's jurisdiction here is unique, the decision it is called upon to make also is unique, and thus each agency's purpose and need is different. Accordingly, each agency has prepared its own statement, as follows:

1.2.2.1 DOE

The purpose and need for DOE action is to determine whether it is in the public interest to grant or deny a Presidential Permit to TEP for the construction, operation, maintenance, and connection of the proposed

345-kV transmission line that would cross the U.S. international border. DOE published a notice of receipt of the Application for a Presidential Permit in the *Federal Register* on September 20, 2000 (65 FR 56875). In determining whether a proposed action is in the public interest, DOE considers the impact of the proposed project on the environment and on the reliability of the U.S. electric power supply system. DOE also must obtain the concurrences of the Departments of State and Defense before it may grant a Presidential Permit. If DOE determines that granting a Presidential Permit is in the public interest, the information contained in the EIS will provide a basis upon which DOE decides which alternative(s) and mitigation measures, if any, are appropriate for inclusion as conditions of the permit. In a process that is separate from NEPA, DOE will determine whether the proposed project will adversely impact the reliability of the U.S. electric system. If DOE were to approve TEP's request for a Presidential Permit, before TEP could export any electric energy to Mexico over the proposed facilities, TEP must apply for and obtain export authorization from DOE under section 202(e) of the Federal Power Act (16 U.S.C. §824a(e)). Before authorizing exports to Mexico over the proposed 345-kV facilities, DOE must ensure that the export will not impair sufficiency of electric supply within the United States and will not impede, or tend to impede, the coordinated use of the regional transmission system. Issuance of a Presidential Permit indicates only that DOE has no objection to the project, but does not mandate that the project be completed. DOE may grant a Presidential permit for one or more of the alternative corridors. In the event DOE denies a permit, TEP's transmission lines would not be allowed to cross the border into Mexico, although the transmission lines, or some other version of the project, could otherwise still be built within the United States if BLM and USFS were to approve the project.

1.2.2.2 USFS

The USFS's proposed action is to authorize TEP to use National Forest System lands in the Tumacacori Ecosystem Management Area (EMA) of the Coronado National Forest for placement, operation, and maintenance of the proposed 345-kV electrical transmission line, access roads, fiber optics lines, and specific support facilities. TEP's land use requirements in the EMA would differ among the alternative corridor routes, ranging from approximately 15 mi (24 km) to nearly 30 mi (48 km).

The USFS purpose and need for action is mandated by its statutory responsibility under the FLPMA, which requires that it consider applications for use of National Forest System lands for purposes that are in the public interest, such as utility corridors, and that are identified as appropriate in the governing land and resource management plan. The FLPMA provides for the Secretary of Agriculture to issue, renew, or grant authorizations to occupy, use, or traverse National Forest System lands for the generation, transmission, and distribution of electrical power (Title 43, Chapter 35, Subchapter V, Section 1761).

Similarly, the purpose and need for USFS action on the proposed amendments to the Land and Resource Management Plan for the Coronado National Forest (1986, as amended) (hereafter, Forest Plan) derives from statutory requirements that "...the Forest Supervisor ... ensure that, subject to valid existing rights, all ...instruments for occupancy and use ... are consistent with the [forest] plan" (36 CFR 219.10(e)). To authorize TEP to occupy and use National Forest System lands for a 345-kV electrical transmission line, the USFS must change incompatible management direction in the Forest Plan using the amendment process defined in the Forest Service Manual 1920 and Forest Service Handbook 1909.12 and must follow "appropriate public notification and satisfactory completion of NEPA procedures." The decision by the USFS to approve or deny Forest Plan amendments associated with each of the routing alternatives in this EIS would be based, in part, on the findings of the impact analyses reported in this EIS.

The USFS decision to approve TEP's application and authorize the requested use will be based, in part, on the results of this NEPA review process (i.e., the findings of the impacts analyses reported in this EIS) and further, on the NFMA determination of the consistency of the proposed use with the parameters specified in the Forest Plan. The USFS may deny authorization for special uses for a number of different

reasons, such as follows: “the proposed use would be inconsistent or incompatible with the purpose(s) for which the lands are managed, or with other uses,” or the proposed use “would not be in the public interest” (36 CFR 251.4).

An amendment to the Forest Plan for the Coronado National Forest would be needed for any of the three action alternatives. The amendment process would have to be complete before implementation of the proposed project. Appendix H describes the amendment process and requirements.

1.2.2.3 *BLM*

The purpose and need for BLM action is to determine whether or not to approve an electrical transmission line ROW and a fiber optic ROW in accordance with the FLPMA. Development of the proposed transmission line would require BLM approving two separate ROW grants, one for the transmission line and one for the fiber optics line. TEP applied to BLM on March 20, 2001, for approval to construct a double circuit 345-kV transmission line across 1.25 mi (2.0 km) of Federal lands managed by BLM approximately 5 mi (8 km) west of Sahuarita, and submitted its application to BLM for the proposed fiber optic facilities on April 14, 2003. The fiber optic permit application is for an undefined use outside of TEP internal use, and would be renegotiated if the use changes. In processing the applications, BLM must consider land status, affected resources, resource values, environmental conditions, and the concerns of various interested parties in accordance with the BLM Manual and Handbook 1790-1 and Departmental Guidance (516 DM 1-7). BLM must conform to the existing BLM Resource Management Plan (BLM 1988) that designates land uses and other special uses. BLM must complete an administrative NEPA review process prior to implementing a decision documented in the ROD with regard to approval or denial of the ROW grant(s).

1.2.2.4 *USIBWC*

The purpose and need for USIBWC action is to review plans for construction of the proposed project where it would cross the border between the United States and Mexico, and to assess whether the effects of the proposed project would be consistent with existing bilateral arrangements between the two countries or would obscure or otherwise impact the international border. Specific USIBWC concerns about the proposed project include evaluating whether there would be adverse impacts on the visibility and permanent placement of the international boundary monuments and markers, whether project-associated structures could limit access to the international boundary monuments and markers, whether the present drainage patterns to and from Mexico would be affected, and whether potential transboundary pollution problems associated with the proposed project are properly addressed to insure that none occur in either country. USIBWC will not approve any construction in the United States that increases, concentrates, or relocates overland drainage flows into either the United States or Mexico. Surface drainage must be handled so that there is no increase of volume, peak runoffs, or flow concentration across the border in either direction (USIBWC 2003). Prior to construction of the selected corridor, TEP would provide to USIBWC, for its approval, copies of any hydrological or hydraulic studies and site-specific drawings for work proposed in the vicinity of the U.S.-Mexico border. This would include review of any structures proposed to be constructed in any drainage courses that cross the border. USIBWC is not a cooperating agency in preparation of this EIS, but will use information in this EIS in conjunction with review of project studies and plans to prepare a letter of concurrence, if appropriate, to the project proponents (in this case, TEP).

1.3 THE ALTERNATIVES CONSIDERED

The CEQ regulations require that Federal agencies rigorously explore and objectively evaluate all reasonable alternatives for accomplishing the proposed action (40 CFR 1502.14). As discussed in detail

in Chapter 2, this EIS reviews in depth three alternative corridors for the siting of TEP's proposed 345-kV transmission line (depicted in Figure 1.1-4) and a single proposed route for the 115-kV transmission line between the Gateway and Valencia Substations in Nogales, Arizona, (depicted in Figure 1.1-5). This EIS also includes a No Action Alternative, in which the transmission lines would not be constructed and operated as proposed. In summary then, the alternatives are:

1. Western Corridor;
2. Central Corridor (Options 1 and 2);
3. Crossover Corridor (Options 1 and 2); and
4. No Action.

Western Corridor. As shown on Figure 1.1-4, the Western Corridor is the westernmost alternative connecting the South Substation in Sahuarita to the U.S.-Mexico border. The Western Corridor extends for an estimated 65.7 mi (105 km), including an estimated 9.3 mi (15.0 km) that follows or crosses the EPNG pipeline ROW. The Western Corridor crosses 29.5 mi (47.5 km) of USFS land and 1.25 mi (2.0 km) of BLM land. Portions of the Western Corridor route crossing the Coronado National Forest are not consistent with management direction in the governing Forest Plan. The Forest Plan would be amended to establish a new utility corridor, establish utility corridor width, and change visual quality objectives as fully described in Section 2.1.1.

Central Corridor. As shown on Figure 1.1-5, the Central Corridor overlaps the northern portion of the Western Corridor from the South Substation in Sahuarita for approximately 18 mi (29 km), then continues south parallel to the existing EPNG pipeline ROW, connecting Sahuarita to the U.S.-Mexico border. The Central Corridor extends for an estimated 57.1 mi (91.9 km), including an estimated 43.2 mi (69.5 km) that follows or crosses the EPNG pipeline ROW. Within one 1.9 mi (3.1 km) stretch of the Coronado National Forest, two optional sub-routes for the Central Corridor are addressed: (1) Option 1 avoids a 1.9-mi (3.1-km) stretch of the EPNG pipeline ROW that is also designated as an inventoried roadless area (IRA), and (2) Option 2 follows the EPNG pipeline ROW (see Figure 2.1-3). The Draft EIS did not include both optional routes (i.e., did not include Option 2) because there was a perceived need to avoid that portion of the existing EPNG pipeline ROW that is designated as an IRA. However, based on public comments, the Federal agencies decided that a route following the EPNG pipeline ROW would be a reasonable option for the transmission lines through the Coronado National Forest. Such a route would allow the transmission lines to be constructed and operated in an area that is currently designated in the Forest Plan as a utility corridor. Additionally, an optional route within the existing EPNG pipeline ROW would not require creation of a new utility corridor and would give the USFS greater flexibility in managing the 1.9-mi (3.1-km) stretch of land that is not currently designated as a utility corridor. The estimated length of the Central Corridor within the Coronado National Forest is 15.1 mi (24.8 km). The estimated length of the Central Corridor on lands managed by BLM is 1.25 mi (2.0 km). Portions of the Central Corridor (both Option 1 and Option 2) crossing the Coronado National Forest are not consistent with management direction in the governing Forest Plan. The Forest Plan would be amended to establish a new utility corridor, establish utility corridor width, and change visual quality objectives as fully described in Section 2.1.2.

Crossover Corridor. As shown on Figure 1.1-4, the Crossover Corridor overlaps the northern portion of the Western Corridor from the South Substation in Sahuarita into the Coronado National Forest, then turns east at Peck Canyon to meet up with the Central Corridor, and continues south to the U.S.-Mexico border. The Crossover Corridor extends for an estimated 65.2 mi (105 km), from the South Substation to the U.S.-Mexico border, including an estimated 17 mi (27.4 km) that follows or crosses the EPNG

pipeline ROW. Like the Central Corridor, two optional sub-routes for the Crossover Corridor are addressed: (1) Option 1 avoids a 1.9-mile (3.1-km) stretch of the EPNG pipeline ROW that is designated as an IRA, and (2) Option 2 follows the EPNG pipeline ROW. The estimated length of the Crossover Corridor within the Coronado National Forest is 29.3 mi (47.2 km). The estimated length of the Crossover Corridor on lands managed by BLM is 1.25 mi (2.0 km). Portions of the Crossover Corridor (both Option 1 and Option 2) crossing the Coronado National Forest are not consistent with management direction in the governing Forest Plan. The Forest Plan would be amended to establish new utility corridor, establish utility corridor width, and change visual quality objectives as fully described in Section 2.1.3.

No Action Alternative. The CEQ regulations require that an agency “include the alternative of no action” as one of the alternatives considered (40 CFR 1502.14[d]). In the context of this EIS, “no action” means that TEP’s proposed transmission lines would not be built. For DOE and the cooperating agencies, “no action” would be achieved by any one of the Federal agencies declining to grant TEP permission to build in its respective jurisdiction. Thus, in the case of DOE, “no action” means denying the Presidential Permit. For USFS, “no action” means denying the authorization. Because the action alternatives would require amendment of the Forest Plan, “no action” is further defined to mean that the Forest Plan, including the Transportation System and Utilities Corridor Map, would remain unchanged. Without authorization and associated Forest Plan amendments, the 345-kV transmission line and associated structures would not be constructed on National Forest System lands. Management of lands and resources in the Tumacacori Ecosystem Management Area would progress as expected under current management direction. For BLM, “no action” means denying access to BLM-managed Federal lands. For USIBWC, “no action” means denying permission to cross the international border. Each agency makes its own decision independently, so that it is possible that one or more agencies could grant permission for the proposal while others could deny permission. Thus, if any agency denies permission for the proposed transmission line, it would not be built.

Alternatives Considered But Eliminated from Detailed Study. The CEQ regulations also require that Federal agencies briefly discuss alternatives that were eliminated from detailed study. (40 CFR 1502.14(a)). Section 2.1.5 discusses the alternatives that were considered but eliminated from detailed study.

1.4 THE FEDERAL AGENCIES’ PREFERRED ALTERNATIVES

NEPA requires the identification of the agency's preferred alternative or alternatives in a Draft EIS if one or more exists, or, if one does not yet exist at the draft stage, in the Final EIS (40 CFR Part 1502.14[e]). In the Draft EIS, DOE identified the Western Corridor as its preferred alternative. It did so for three reasons: First, the Western Corridor was TEP’s preferred route. Second, this is consistent with ACC Decision 64356, in which the ACC granted TEP a CEC to construct the proposed transmission line along the preferred Western Corridor, which is also consistent with the Line Siting Committee’s recommendation (see Section 1.2.2). Third, DOE hoped to focus public comment on the Western Corridor in an effort to discern public reaction to that choice versus the other alternatives. The remaining Federal agencies did not have preferred alternatives when the Draft EIS was issued, but elected instead to designate their respective preferred alternatives in the Final EIS after all of the environmental information had been reviewed and evaluated.

Each Federal agency here has its own unique jurisdiction and responsibilities in making decisions with respect to TEP’s proposal. These different perspectives are reflected in the agencies’ statements of purpose and need set forth in Section 1.2. This explains why the preferred alternatives of the Federal agencies, discussed below, are not necessarily the same. If TEP ultimately does not receive the unanimous consent of all Federal agencies, the State of Arizona, and regulatory entities to build along the

same corridor, this project would not be allowed to proceed as proposed. The Federal agencies' preferred alternatives are as follows:

1.4.1 DOE's Preferred Alternative

The CEQ's regulations for implementing NEPA require a Federal agency to identify its preferred alternative in the Draft EIS if it has one at that time or, if one does not exist at the Draft stage, to identify its preferred alternative in the Final EIS, 40 CFR § 1502.14(e). DOE designated the Western Corridor as its preferred alternative in the Draft EIS for three reasons. First, it was the corridor designated by the State of Arizona for TEP's transmission line. Second, it was TEP's preferred route. Third, DOE believed that designating a preferred alternative in the Draft would stimulate and focus public comment on the alternatives set forth in the Draft EIS.

Since the Draft EIS was published several events have occurred that bear on DOE's designation of the Western Corridor as its preferred alternative. First, the USFS has designated the Central Corridor as its preferred alternative. Second, while the ACC's original decision designating the Western Corridor for TEP's project still stands, the ACC re-opened the siting proceeding to consider new evidence, including the analyses presented in this Final EIS. Third, DOE has received numerous comments both for and against the Western and Central Corridors, and has developed additional environmental analysis with respect to all of the alternative corridors.

In order to meet the regulatory requirements that it designate a preferred alternative, DOE has decided to continue to designate the Western Corridor, again because it reflects the State of Arizona's present choice, and continues to be TEP's preference. This being said, it is important to understand that the NEPA analysis suggests to DOE that all of the analyzed corridors appear to be acceptable from DOE's perspective, and that DOE could approve any or all of them in its Record of Decision (ROD).

Given the foregoing, it is important that the inference not be drawn from DOE's designation of the Western Corridor that DOE and the USFS disagree with respect to the suitability of the Central Corridor for this project. Indeed, DOE recognizes that the Central Corridor appears to have the fewest environmental impacts of all the corridors. DOE has designated the Western Corridor for the reasons explained above.

1.4.2 USFS' Preferred Alternative

The USFS did not identify a preferred alternative in the Draft EIS because key pieces of analysis were not yet available at the time the Draft EIS was published. Following publication of the Draft EIS, the needed analyses became available and were reviewed. Based on this review, the USFS has identified the following preferred alternative:

Central Corridor (Option 1): issue an authorization to allow TEP to construct, operate, and maintain a 345-kV electrical transmission line across National Forest System lands of the Tumacacori Ecosystem Management Area in the route described in this EIS as Central Corridor Option 1; and approve associated Forest Plan amendments to designate new utility corridor, establish corridor width, and change visual quality objectives (see Appendix H for details associated with the USFS Forest Plan Amendments).

1.4.3 BLM's Preferred Alternative

The BLM decision regarding this EIS is to determine whether or not to approve an electrical transmission line ROW and a fiber optic ROW in accordance with the FLPMA. The BLM's preference is to grant such

ROWS. With respect to transmission line routing, each transmission line alternative would cross Federal lands managed by the BLM along the same route. As such, there would be no difference among the alternative corridors with respect to the land managed by the BLM. Because the BLM decision would not affect any route ultimately selected (if any), the BLM does not need to identify a preferred corridor alternative.

1.4.4 USIBWC's Preferred Alternative

The USIBWC decision regarding this EIS is to assess whether the effects of the proposed project would be consistent with existing bilateral arrangements between the U.S. and Mexico or would obscure or otherwise impact the international border. The USIBWC's preference is to allow the proposed project to cross the U.S.-Mexico border. With respect to transmission line routing, each transmission line alternative would cross the U.S.-Mexico border along the same route. As such, there would be no difference among the alternative corridors with respect to the USIBWC decision. Because the USIBWC decision would not affect any corridors ultimately selected (if any), the USIBWC does not need to identify a preferred corridor alternative.

1.5 TEP'S PROPOSED PROJECT CAPACITY AND USAGE

The proposed TEP 345-kV transmission line would provide a redundant path for the energy that is currently transmitted over the Citizens 115-kV transmission line from Tucson to Nogales, Arizona. While each circuit is thermally capable of transmitting 1,000 MW, the double circuit system has been designed and would be operated to transmit 500 MW total, for operational and reliability considerations (see Section 2.2.3). TEP reached agreement with Citizens to provide up to 100 MW of transmission capacity from Tucson to Nogales, Arizona. This would allow Citizens to improve reliability of electric service to its customers in Santa Cruz County. Citizens committed to the purchase of 100 MW of transmission capacity from TEP to allow for future load growth above Citizen's current Santa Cruz County load of approximately 65 MW. Once TEP's proposed 345-kV transmission line is in-service, Citizens would be able to make some needed upgrades to its existing 115-kV transmission line that would allow it to achieve a capacity of 100 MW, thus allowing either line to serve Citizens' load for the foreseeable future.

TEP anticipates using the remaining 400 MW of capability for transport of energy between the United States and Mexico. Typically an electricity producer like TEP generates and sells its own electricity using its own transmission system. However, if DOE should decide to grant a Presidential Permit to TEP, it would include a condition in the permit requiring TEP to provide non-discriminatory open access transmission service on the subject international facilities. Open access is a regulatory policy which requires transmission owners to make their transmission facilities available for the transmission of electric energy by third parties. Therefore, while the TEP international facilities could be utilized for potential future electricity exports to Mexico, the source of those future electric energy exports might not necessarily be TEP. TEP would initially use the two proposed fiber optic cables contained within the two neutral ground wires for supervision and operation of the transmission line and connected substations (TEP 2003).

The CFE electric system does not operate synchronously with the U.S. system, so during the 1990s TEP studied various possible electrical connection options with CFE, including a direct current line that would remove synchronization problems. However, the cost of such a connection proved that it was not feasible. This led TEP in 1998 to discuss with CFE the potential for a synchronous alternating current connection with the Mexican system. In 1999, TEP and CFE undertook detailed studies to investigate the feasibility of such a link. The studies undertaken by TEP and CFE contemplated that CFE would separate the Noreste region of its system from the balance of the Mexico electric grid, such that the Noreste region

would synchronously be linked with the TEP system. The U.S. and Mexico systems then would be able to operate reliably with this connection at significant cost savings to both TEP and CFE (TEP 2003).

1.6 NEPA PROCESS AND PUBLIC PARTICIPATION

1.6.1 Public Scoping

A Federal agency first issues a Notice of Intent (NOI) to prepare an EIS. The NOI is published in the *Federal Register* to inform the public that an EIS will be prepared and to formally announce the beginning of the scoping process. The NOI describes the proposed action and alternatives the agency is considering; provides preliminary information on issues and potential impacts; and invites comments, questions, and suggestions (both written and oral) on the scope of the EIS. In the process known as scoping, the public provides comments directly to the Federal agency on the scope of the EIS. This aids the Federal agency in determining the alternatives, issues, and environmental impacts to be analyzed in the EIS. DOE regulations require that at least one public hearing be held to facilitate the collection of public comments.

The “Notice of Intent to Prepare an Environmental Impact Statement (EIS) and to Conduct Public Scoping Meetings and Notice of Floodplain and Wetlands Involvement” for the proposed project was published in the *Federal Register* (66 FR 35950) on July 10, 2001. Announcements were also placed in local newspapers. A fact sheet translated into Spanish has been provided on the proposed project website maintained for DOE (www.ttelclients.com/TEP). Public scoping meetings were held by DOE on July 30, 2001, at the Rancho Resort in Sahuarita, Arizona, and on July 31, 2001, at the Rio Rico Resort in Rio Rico, Arizona. Both oral and written comments were invited and received at these meetings. A total of 65 individuals presented formal oral comments at the two public scoping meetings. Written scoping comments were also solicited in the announcements. The public comment period was initially to have closed on August 9, 2001, but, in response to requests from the public, was extended until August 31, 2001. From November 27 to 29, 2001, USFS, BLM, and USIBWC met with DOE to review all scoping comments received to date. As of November 27, 2001, approximately 200 people had submitted formal written scoping comments by letter, email, and postcard campaign. DOE and the cooperating agencies continued to receive public comments up to the printing of the Draft EIS. In addition to the public participation process, consultations have been ongoing with Federal, state, and local resource management and regulatory agencies as well as interested tribal governments, as documented in Chapter 10 and Appendix A of this EIS.

1.6.2 Scoping Comments

The issues raised during public scoping that were deemed within the scope of the EIS are summarized first below; then, issues raised that were not within the scope of the EIS are discussed.

Issues within the Scope of the EIS

- Three commentors made suggestions on combining portions of TEP's proposed routes to make a new alternative. The Crossover Corridor, a combination of the northern portion of the Western Corridor and the southern portion of the Central Corridor, connected with a new segment through Peck Canyon, was added to this EIS as a reasonable alternative for analysis based on these comments and tribal consultations.
- Eleven commentors questioned TEP's purpose and need for the project, and the role of the public in the decision-making process.

- One hundred and eleven (111) commentors raised issues regarding the biodiversity and visual beauty of the region. Of particular concern were:
 - National Forest System lands managed by the Coronado National Forest, including the Tumacacori Ecosystem Management Area, Pajarita Wilderness Area, Goodding Research Natural Area, Sycamore Canyon, Peña Blanca Lake Recreation Area, and the Chiltipene Botanical Area.
 - Juan Bautista de Anza Trail
 - Threatened and endangered species
 - Invasive species
 - Protection for wild raptors and birds of prey
 - Potential effects on tourism, hiking, photography and birding
 - Potential impacts of the Sonoran Desert Conservation Plan
- Thirty-three (33) commentors raised issues about effects on the local community, highlighting:
 - The rural character of the area
 - Socioeconomic issues
 - Historic and cultural resources, including the historic value of the Santa Cruz Valley, Tohono O’Odham Rancherias, historic mining properties, and Tubac Presidio State Historic Park
- Thirteen commentors raised issues regarding the potential impact of the proposed project on property values in the area.
- Two commentors requested that environmental justice issues be examined in the EIS.
- Twenty-four (24) commentors questioned potential effects on human health, including:
 - Electric and magnetic field effects
 - Interference with specially designated flight airspace
 - Potential for sabotage by terrorists
 - Safety issues related to co-locating an electrical transmission line and a natural gas pipeline
 - Fourteen (14) commentors raised issue about physical disturbance of the area, including:
 - Erosion during construction

- Floodplain and wetland involvement
- Expansion of the South Substation within a floodplain

Issues Out of Scope of the EIS

Based on the comments received during scoping, the following issues were identified in the Draft EIS as being outside the scope of the environmental review:

- Five (5) commentors stated the cumulative impacts of the proposed project and other potential future projects, such as a power plant proposed for development in Nogales, Arizona by Maestros Group or other power plants should be evaluated.
 - As required by CEQ guidance, cumulative impacts are addressed in this environmental review to the extent that the future projects are reasonably foreseeable, the potential resource area impacts overlap, and inclusion of the potential future projects would not be arbitrary. Because neither the Arizona Department of Environmental Quality nor the Pima County Department of Environmental Quality has received permit applications for new power plants in southern Arizona, the area covered by this project, this issue was determined to be speculative and therefore outside the scope of this environmental review.
- Three (3) commentors suggested that the Republic of Mexico might build power plants to sell electricity to the United States of America.
 - DOE is not aware of any proposals by the Republic of Mexico to build power plants to sell electricity to the United States of America in the area covered by this environmental review. Therefore, this assertion is considered speculative and therefore outside the scope of this environmental review.
- One (1) commentor raised issues regarding the potential for increased development (residential and commercial) in southern Arizona along the central portion of the project location due to an increased availability of electricity.
 - Whether or in what manner the proposed project may lead to additional development in southern Arizona is too speculative to be analyzed in this environmental review.
- Thirty-one (31) commentors suggested additional alternatives for consideration in lieu of the proposal described by the TEP, including: (1) TEP should build a power plant in the Republic of Mexico or Nogales, Arizona; (2) Exploration of alternative energy sources; and (3) Promotion of energy conservation
 - These suggested alternatives would not fulfill the purpose and need for action and were eliminated from further analysis in this environmental review.
- Six (6) commentors suggested that negative effects on the reliability of the United States power grid stemming from an interconnection with Mexican systems might occur.

- Examination of the reliability of the United States electricity grid² is part of DOE's Presidential Permit application review process but does not involve a study of environmental impacts nor disclosure in an environmental impact statement.
- Two (2) commentors suggested coordinating routes and review processes with a concurrent and similar proposal for an electric transmission line in the area by Public Service Company of New Mexico.
 - At about the same time that TEP conceived the transmission line project undergoing environmental review in this document, another utility, Public Service Company of New Mexico (PNM), proposed a very similar transmission line project in the same general southern Arizona area and began laying the foundation for an environmental review. The PNM's project geographically paralleled TEP's proposal even to the extent of utilizing some of the same corridor routes undergoing environmental analysis in this Final EIS. PNM's proposal would have used the same general technology to transmit electric power to Nogales, Santa Cruz County, and the Republic of Mexico. As TEP's proposal progressed from the conceptual phase to technical design and entered the ACC's licensing process, realization of the PNM's proposal became moot because DOE would not permit two competing power transmission lines along roughly the same corridor and to the same ultimate destination. Thus, there is no underlying need to include the PNM's proposal as an alternative in this environmental analysis, nor to analyze the impacts of the PNM's proposal. In October 2004, PNM indicated to DOE that it would be withdrawing its application for a Presidential Permit, and on November 16, 2004, PNM sent DOE a letter officially withdrawing their Presidential Permit application (see Section 5.2).

1.6.3 Draft EIS Public Review and Comment Period

Following public scoping, the Federal agencies prepared the Draft EIS, the next step in the NEPA process. The Draft EIS describes, analyzes, and compares the potential environmental impacts of the alternatives that could be chosen to accomplish the purpose and need to which the agency is responding. It also provides information on the methodologies and assumptions used for the analyses. If one or more preferred alternative(s) exists at this stage of the NEPA process, they are identified in the Draft EIS. DOE published its Draft EIS on August 27, 2003. Copies of the Draft EIS were sent to interested parties (see Chapter 15) and filed with the U.S. Environmental Protection Agency (EPA).

The Notice of Availability of the Draft EIS was published by the EPA in the *Federal Register* on August 22, 2003 (68 FR 50768), which initiated a 53-day comment period that ended on October 14, 2003. The comment period exceeded the requirement set forth by CEQ Regulations (40 CFR 1506.10[c]) for a Draft EIS public comment period of at least 45 days. Although the official public comment period for comments on the Draft EIS closed on October 14, 2003, the Federal agencies continued to accept and consider comments after the close of the public comment period.

During the comment period, public hearings were held in Green Valley, Arizona on September 25, 2003 and in Nogales, Arizona on September 26, 2003. Notification of the public hearings was accomplished through a variety of media. The time and location of the hearings were posted in DOE's August 27, 2003, notice in the *Federal Register* (68 FR 51569) and on DOE's project website at www.ttclients.com/TEP.

² Note that the reliability of local electricity service in Santa Cruz County and Nogales, Arizona was among the factors considered during alternative development.

In addition, announcements were placed in newspapers and read on local radio stations in Tucson, Green Valley, and Nogales, Arizona. In Tucson, the announcements were printed in the *Arizona Daily Star/Tucson Citizen* on September 14, 21, 24 and 25, 2003. In Green Valley, the announcements were printed in the *Green Valley News* on September 17, 19 and 24, 2003, and radio announcements were made from September 22 through September 24, 2003. In Nogales, the announcements were printed in *Nogales International* on September 19, 23 and 26, 2003, and radio announcements were made in Spanish from September 23 through September 25, 2003, on Spanish language radio stations.

At each hearing, DOE received oral and written comments on the Draft EIS. In addition, the public was encouraged to provide comments via a toll-free comment line, U.S. mail, fax, e-mail or on the internet through the DOE website. The Federal agencies have considered and responded in this Final EIS to all of the comments received. Volume II of this EIS, the Comment-Response Document, describes the public comment process in detail and contains transcripts from the public hearings, copies of all comments received, and the Federal agencies' responses. The major changes are discussed in the next section.

1.6.4 Major Comments Received on the Draft Environmental Impact Statement

Approximately 7,300 discrete comments on the Draft EIS were received during the comment period. Of these, approximately 5,500 comments resulted from an e-mail campaign. The major comments received on the Draft EIS included the following:

- Objection to the proposed project because of the potential impacts to visual and recreational resources.
- Question of the need for a 345-kV transmission line. Also, some commentors expressed the opinion that the Draft EIS did not evaluate the range of reasonable alternatives, including a 115-kV line and a local power plant in Nogales.
- Concern over the effect the proposed project would have on electricity rates.
- Support for the No Action Alternative.
- Failure to address potential impacts on private property. Specifically, commentors questioned the impact of the proposed project on property values.
- Potential impacts associated with flooding. Specifically, commentors stated that the 500-year flood event should be evaluated in the EIS.
- Violation of the Forest Plan for the Coronado National Forest. Specifically, commentors questioned impacts associated with roads, the USFS Scenery Management System Objectives, and the USFS Recreation Opportunity Spectrum.

All of the comments identified above, as well as all other comments received, are responded to in detail in Chapter 2 of the Comment-Response Document (Volume II of this EIS). The major changes are discussed in the next section.

1.6.5 Changes from the Draft Environmental Impact Statement

The Federal agencies have changed the Draft EIS in response to comments or to reflect new information. A brief discussion of the more significant changes is provided below.

Purpose and Need, Range of Reasonable Alternatives, and Background Information. Chapters 1 and 2 were reorganized and augmented to clarify the roles of each Federal agency in the review of TEP's proposed project, and to describe the range of reasonable alternatives that a Federal agency is required to evaluate for an applicant-initiated project such as TEP's proposed project. The Federal agencies also included additional background information on the origin of TEP's proposal and on the NEPA process.

Connecting 115-kV Transmission Line in Nogales, Arizona. The Federal agencies revised the EIS to evaluate TEP's proposed 115-kV transmission line between the proposed Gateway Substation and the existing Valencia Substation in Nogales, Arizona. The construction of this 115-kV transmission line is an action that is connected to construction of the proposed 345-kV transmission line. Chapter 2 has been revised to describe the proposed 115-kV transmission line, Chapter 3 has been revised to describe the environment that would be affected by its construction and operation, and Chapter 4 has been revised to present the potential environmental effects from its construction and operation. Other sections of the EIS were revised as appropriate to reflect the proposed 115-kV transmission line. A Biological Assessment for this 115-kV transmission line was added as Appendix K.

Additional Alternatives Considered but Eliminated from Detailed Study in the Final EIS. Five new alternatives are briefly considered in the Final EIS because they were raised in the public hearings and in the written comments on the Draft EIS, but were not addressed in the Draft EIS. As discussed in Section 2.1.5 of the Final EIS, these alternatives have been considered but were determined to be unreasonable and were eliminated from further analysis: (1) upgrading existing transmission lines; (2) conservation of electricity; (3) underground construction of the 345-kV line in lieu of aboveground support structures; (4) construction of a 115-kV line in lieu of the proposed 345-kV line; and (5) an optional route for the Western and Crossover Corridors that avoids the Caterpillar Facility. In addition, Section 2.1.5 of the Final EIS has been amended to add a description of the potential environmental impacts that could be associated with a new power generating facility.

Optional Sub-Routes Added for the Central Corridor and the Crossover Corridor. Within one stretch of the Coronado National Forest, an optional sub-route for the Central Corridor and the Crossover Corridor was added to the analysis. The Draft EIS only included a route (Option 1) that circumvented the IRA because there was a perceived need to avoid that portion of the existing EPNG pipeline ROW that is also designated as an IRA. However, based on public comments, the Federal agencies decided that a sub-route following the EPNG pipeline ROW would be a reasonable option for the transmission lines through the Coronado National Forest. Therefore, the new Option 2 follows the EPNG pipeline ROW and does not circumvent the 1.9-mi (3.1-km) stretch of the EPNG pipeline ROW that is also designated as an IRA.

Cumulative Impacts. The Federal agencies revised Chapter 5, Cumulative Impacts, in the Final EIS to better assess cumulative impacts, including those from reasonably foreseeable actions. Table 5.4-1 was added to the Final EIS to provide a summary comparison of the cumulative impacts by resource area and identify any differences in cumulative impacts for the Western, Central, and Crossover Corridors. The revisions to Chapter 5 provide additional information on new power plants in Mexico and southern Arizona in the vicinity of the proposed project, and air quality impacts in the U.S.-Mexico border region.

Safety. Section 4.10, Human Health and Environment, of the Final EIS has been revised to include a discussion of the safety considerations of locating a 345-kV transmission line in the vicinity of the natural gas pipeline.

Biological Resources. The Federal agencies revised Sections 3.3 and 4.3, Biological Resources, in the Final EIS to reflect revisions to the Biological Assessments, USFS Management Indicator Species Report, and Migratory Bird Treaty Act Report prepared for the proposed project. In addition, information regarding newly-designated critical habitat for the Mexican spotted owl is provided in the Final EIS.

Native American Consultations. The Federal agencies revised Sections 3.4.2 and 4.4.2, Native American Concerns, in the Final EIS to better reflect the results of Native American consultations on the proposed project.

500-year Floodplain/Wetlands Assessment. The Federal agencies revised the Floodplain/Wetlands Assessment in Appendix C, and the related discussion and analysis in Sections 3.7 and 4.7, Water Resources, of the Final EIS to identify and evaluate impacts to the 500-year floodplain. This change was based on a determination that the South Substation (which would be expanded as part of the proposed project) would be a critical facility.

Forest Plan Amendment Appendix. A new appendix (Appendix H) was added to identify the requirements of the NFMA and the amendments to the Coronado Forest Plan that would be necessary prior to implementation of the various project alternatives.

USFS Visual Impacts Appendix. A new appendix (Appendix I) was created to provide additional information on visual impacts.

ACC Appendix. A new appendix (Appendix J) was created to provide information regarding the ACC Orders that provide the framework for the proposed action and the alternatives in this EIS.

There were also minor technical changes and clarifications made throughout the TEP EIS. None of the changes had a major effect on the comparative evaluation of the alternatives or the conclusions that can be drawn from the EIS.

1.6.6 Next Steps

As discussed in Section 1.4, this Final EIS identifies each agency's preferred alternative. It does not, however, contain the final decisions by those agencies. A Federal agency must wait a minimum of 30 days following EPA's publishing of a Notice of Availability of the Final EIS in the *Federal Register* to make its final decision. Each agency's final decision is set forth in a separate formal document. For this project to go forward as proposed, DOE would have to issue a ROD granting a Presidential Permit. Similarly, a ROD issued by the USFS would authorize the occupancy and use of specified National Forest System lands for development of a 345-kV electrical transmission line and concurrently adopt associated Forest Plan amendments. BLM would have to issue a ROD granting a ROW permit. USIBWC would have to issue a letter to TEP stating its concurrence in the EIS and supporting project studies and plans.

A ROD accomplishes several things in addition to describing the agency's decision. First, it identifies all of the alternatives that the agency considered. Second, it identifies which of the alternatives the agency considers environmentally preferable, i.e., which alternative has the least negative environmental impact, or, to put it another way, which would best protect the environment. Thirdly, it articulates the other factors that the agency considered in making its decision. Factors agencies consider in making their decisions include, but are not limited to, environmental, economic and technical considerations, the agency's mission, and the imperatives of national policy. Finally, the ROD describes whether all practicable means to avoid or minimize (i.e., mitigate) impacts are to be undertaken, and if they are not, explains why not.

NEPA does not dictate that an agency must select the most environmentally preferable alternative. As long as an agency has taken a hard look at the environmental impacts of the range of reasonable alternatives, it is free to decide among them, regardless of the environmental consequences, or even to decide that all of the action alternatives are acceptable. The purpose of the NEPA process is to ensure

that accurate environmental studies are performed; that they are done with public involvement; and that public officials make decisions based on an understanding of the potential environmental consequences.

Each Federal agency here has its own unique jurisdiction and responsibilities in making decisions with respect to TEP's proposal. These different perspectives are reflected in the agencies' statements of purpose and need set forth in Section 1.2. This explains why the preferred alternatives of the Federal agencies are not necessarily the same. If TEP ultimately does not receive the unanimous consent of all Federal agencies, the State of Arizona, and regulatory entities to build along the same corridor, this project would not be allowed to proceed as proposed.